

Review of Team Creativity

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Abstract—Team creativity is an important factor for enterprises to maintain their superiority and vitality in a fierce competitive environment. On the basis of exploring the source of team creativity, this paper summarizes the definition of team creativity by existing scholars. Secondly, after reviewing the past research on team creativity we found that the team's creativity was sorted out from the perspectives of aggregation, process and network. Finally, the research on team creativity was summarized and it was found that the research on team creativity needs further research from the viewpoint of social networks.

Keywords—team creativity; the view of aggregation; the view of process; social network

I. INTRODUCTION

Team creativity is an important factor for companies to maintain their strength and vitality in a fiercely competitive environment. Therefore, finding ways to promote team creativity has always been a crucial topic to scholars and managers. Previous research reveals that team creativity can be divided into three perspectives: aggregation, process and social network. The view of aggregation advocates that individual creativity and individual traits play a crucial part in forming team creativity[1]. The formation of team creativity is examined by the social network perspective based on a more holistic and interactive way [2]. Although there is a tendency for complementarity and integration between the three perspectives, the conclusions from the three perspectives may exhibit significant differences.

II. THE CONCEPT AND CONNOTATION OF TEAM CREATIVITY

The definition of team creativity stems from individual creativity. Individual creativity is the ability or level of employees' ability to generate novel, useful ideas, processes, products or services[3]. Referring to this definition, scholars define team creativity as the ability or level of a team to produce creativity, practical ideas, processes, products, or services [4]. Although there is a strong connection between team creativity and individual creativity, there are also significant differences between them. Team creativity is generated by creative individual members. Without creative members, team creativity cannot be discussed.

However, team creativity needs to be recognized and accepted by team members through interaction or process

between members [5] [6]. Therefore, even if each member of the team is highly creative, the team's creativity is not necessarily high. If individual creativity cannot be effectively transformed through the team process, it may increase team conflict and internal friction thereby reducing team creativity[7]. Another construct related to team creativity is team innovation, which relates to the introduction and implementation of novel, useful thoughts, methods, products or procedures in the work [8]. Broadly speaking, team innovation includes team creativity. The process of team innovation includes two stages, namely the generation of creativity and the stage of creative execution. Among them, team creativity refers to the generation of creativity.

III. RESEARCH STATUS OF TEAM CREATIVITY

The scholars point out that research on creativity should focus on teams[9]. As stated earlier, the existing research on team creativity can be roughly divided into three directions: aggregation view, process view and network perspective. The specific research distribution is demonstrated in Fig. 1.

The scholars are very concerned about the impact of team members' individual characteristics, team composition, and scale on team creativity [1]. Among them, the research focusing on team diversity (heterogeneity) is the most prominent, and the research conclusions have brought us a lot of inspiration. The empirical analysis by Taylor and Greve shows that the longer the cooperation time, the higher the team's innovation performance. Relevant research mainly uses the composition theory of creativity and related models to analyze, and shows that individual creativity determines team creativity, but team characteristics, processes and environment will also play a regulatory role[10].

However, the basic assumption that the individual attributes are directly connected with team creativity and the individual creativity is the decisive factor is also challenged and questioned because research finds that high team members' creativity does not necessarily lead to high team creativity. For example, high creativity in some situations may even bring internal friction to the team, which increases team creativity[11]. Therefore, some scholars focus on the impact of team process or team atmosphere. Their views are based on motivation and interpersonal interaction. Good atmosphere and team activities encourage team creativity and personal creativity. For example, Edmondson found that an open, secure team atmosphere helps team members to create

psychological security in knowledge sharing, which in turn helps to increase team creativity[12]. Hoever et al. found through experimental research that diversified teams will have higher team creativity than homogenous teams when their members are willing to accept others' opinions, which proves that the acceptance of opinions among team members is key interaction factors generated by team creativity[11]. In addition, team emotional atmosphere, team reflection, team conflicts and leadership factors have all proven to be key factors influencing team creativity[13] [14] [15]. Since the social network perspective can overlap the traditional perspective and examine the impact of the connection and structure among team members, it can complement the traditional perspective. Perry-Smith and Shalley have clearly stated that the creativity of individuals and teams should be observed through social network perspective, emphasizing that both the member's network location and the quality and quantity of external connections may have an important impact on creativity[16]. It also confirmed its main points in its subsequent empirical research.

Although there are not many studies on the concept of social network interaction to explore team creativity, the recent rise of social network theory has attracted the attention of scholars[17] [18]. Perry-Smith and Shalley pointed out that informal network relationships outside team members can increase cognitive diversity within a team and promote team creativity[19]. Perry-Smith and Mannucci indicated that the connection between social networks and team innovation is complex, and that only network relationships are adapted to different stages of innovation, which will promote the improvement of team innovation[20]. All in all, the use of social network theory to study team creativity is still in the exploratory stage, and relevant conclusions and understanding still need to be further enriched and improved.

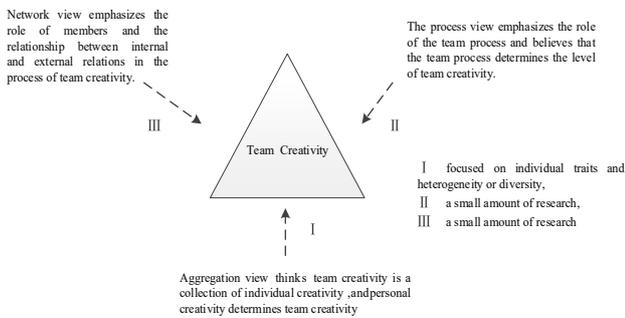


Fig. 1. Distribution of team creativity research status.

IV. CONCLUSION

The existing research reveals that the formation mechanism of team creativity is still insufficient. In particular, many studies haven't considered the connection between individuals and teams, and cannot respond to a key question: "Why can team creativity surpass the collection of individual creativity? Now some researchers have attempted to turn to

new perspectives to explore team creativity, including the following aspects:

First, the characteristics and processes of ordinary members are turned to key members. If individual creativity cannot be absorbed and internalized by the team, individual creativity will be difficult to contribute to team creativity. Therefore, scholars have paid attention to the influence of the characteristics and behavior of some key team members (such as team leaders, highly creative employees, team star employees, etc.) on team creativity, because key people have high influence in the team, resources or capabilities that make it easier to integrate knowledge and ideas. At the same time, scholars also recognize the role of star employees in the team on early team performance, for example [21]. Although these studies do not directly link the behavior and characteristics of these key members to team creativity, this perspective provides new ideas for team creativity and the formation of team creativity. It is not limited to general attention to the composition and characteristics of team members, so it has also begun to attract the attention of scholars.

Second, from the intra-team mechanism to the off-team mechanism. In the past, scholars mainly attributed the formation of team creativity to the role of the internal process of the team. Based on the logic of input-process-output, the team's creativity was investigated, and the internal processes of the team (such as team reflection, team learning, etc.) were considered to decide the efficiency of team creativity [22] [23]. However, the team is often not a closed system; it is also interfered by external connections and the environment. Therefore, some scholars have begun to shift their vision from the internal process to the outside. It is considered that the external process of the team is equally important for the formation of team creativity, because closed team is likely to be conservative, and the external behavior of the team members can bring continuous new knowledge and resources to the team [24] [25]. Based on this perspective, some scholars began to focus on the impact of team cross-border behavior and boundary-spanning behavior on team creativity and proved its effectiveness[12]. It can be seen that the attention to the external process of the team has broadened the understanding of the formation mechanism of the team's creativity and provided new thinking for a more comprehensive apprehension of the formation of team creativity.

Team creativity is the result of the integration of systematic knowledge, and it is inseparable from the interaction between team members. It is necessary to illustrate the formation of team creativity from the perspective of social network. Now the research on team creativity is still analyzed from the perspective of traditional psychology, behavior or motivation, and lacks research from the perspective of the overall interaction of social networks. Although social network analysis has received extensive attention in the field of management, and has made great progress, the use of a networked perspective to reveal the relationship between narcissistic leadership and team creativity is still almost blank. Theoretically, the behavior and traits of leaders are

important factors influencing employee behavior. Therefore, narcissistic leadership also plays a significant position in shaping the interaction structure between team members. Linking narcissistic leadership and team creativity from the view of social networks not only increases the theoretical depth of the two themes, but also broadens each other's research scope and research validity.

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